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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 636,226	08 10 2000	Masahiko Hirose	04558 044001	7100

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EXAMINER

FORTUNA, ANA M

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 07/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/636,226

Applicant(s)

Hirose

Examiner

Ana Fortuna

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.

If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on May 2, 2002

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-11 is/are pending in the application.

4a) Of the above, claim(s) 6-11 is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-5 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) (Paper No(s)).

4) ☐ Interview Summary (PTO-413) (Paper No(s)).

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

Art Unit: 1723

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Cadotte et al (4,960,518)(hereinafter '518). Reference '518 discloses the composite polyamide membrane including a porous support and a thin layer of polyamide formed by reacting an aromatic amine and a polyfunctional halide compound (column 2, lines 66-68, column 3, lines 1-66). '518 further discloses treating the composite polyamide membrane with an oxidizing agent containing bromide, e.g. N-bromoamine (column 5, lines 5-19), therefore resulting in a polyamide composite containing bromide and in which bromide is provided in the skin after the formation of the composite membrane as claimed in claims 1-2.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

Art Unit: 1723

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cadotte et al (4,960,518)(hereinafter '518). Reference '518 discloses the composite polyamide membrane containing bromide, as discussed above. The composition in terms of (Br/N) as claimed in claims 3, and 7, is not disclosed, however, adding from 0.1 to about 1 % of the oxidizing reagent or bromide containing compound, e.g. N-bromoamine, to the aqueous solution use for posttreating the composite crosslinked polyamide membrane is disclosed (column 5, lines 38-53). The polyamine composition from 0.01 to 10 % is also suggested by the incorporation by reference of Cadotte (column 6, lines 51-61), of record. Therefore the ratio of Br/N can be calculated as 1, e.g. or lower by adjusting the amine concentration and Br component concentration within the suggested levels. It would have been obvious to one skilled in the art at the time the invention was made to select an amine and oxidizing agents within the ranges suggested by '518, and in particular amine levels lower than 2 %, e.g. to control membrane thickness and membrane flux improvement. As to claims 4-5, the membrane as suitable for isopropyl alcohol rejection and having a high degree of rejection of the (IPA) is disclosed by '518 (column 2, lines 52-62). It would have been obvious to one skilled in the art at the time the invention was made to expect a high IPA rejection for the membrane and to control operation conditions to achieve and adequate rejection, as conventional in the art. Reference '518 teaches the suitable temperature, pressure conditions and rejection of the treated membrane. Specific process operations for the IPA

Art Unit: 1723

filtration are not disclosed, however, the claims are directed to the product and not to the process. adjusting the process conditions by selecting the parameters suggested by '518, or adjusting this parameters according to the feed concentration of alcohol and the particular feed will be within the knowledge of the skilled in the art at the time the invention was made.

Response to Arguments

5. Applicant's arguments filed 5/2/02 have been fully considered but they are not persuasive.

The claims have been considered as amended in the above paper, however, applicant's arguments regarding the chloroamine and bromoamine decomposition in aqueous medium is not persuasive.

Chloroamine (chloramine) and bromoamine (homologue), are known to decompose in aqueous medium by forming nitrogen, hydrochloric acid (oxidation agent), and ammonium chloride, or respectively nitrogen, hydrobromic acid (oxidation agent), and ammonium bromide.

Either further reaction of the salt and or the acid further liberates the bromide in the posttreated membrane of Cadotte et al, producing therefore the high performance membrane. Furthermore, Cadotte et al is clear when defines the bromoamine as and oxidation agent, the oxidation power can only be provide by bromine or chlorine present in the posttreatment solution or generated by reaction with the membrane composition. Therefore, the rejection above is maintained. Rejection over Kurihara et al has been withdrawn, however, it is clear in the art that a polyamide membrane layer (independently of he process use for making the membrane can be treated with inorganic salts containing Br-, e.g. lithium bromide.

Art Unit: 1723

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana Fortuna whose telephone number is (703) 308-3857. The examiner can normally be reached on Monday-Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for regular responses, and (703)872-9311 for after finals.



ANA FORTUNA
PRIMARY EXAMINER

Ana Fortuna

July 01, 2002